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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,964	02/09/2001	Chris R. Fultz	2102937-900110	8207

7590 01/06/2005

Christopher Fultz
Chrisco Software Development, Inc.
Loma Linda, CA 92350

EXAMINER

VIG, NARESH

ART UNIT	PAPER NUMBER
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3629

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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GROUP 3600

Office Action Summary

Application No.

09/779,964

Applicant(s)

FULTZ, CHRIS R.

Examiner

Naresh Vig

Art Unit

3629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2 objected to because of the following informalities:

Claims 1 and 2 recites the limitation:

“inputting into the computer system of the mover entity”.

“transmitting the customer identity, needs and appointment information file to the field sales representative”.

“transmitting the estimate”

There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claims 1 and 2 rejected under 35 U.S.C. 112, second paragraph, as being incomplete. Claims 1 and 2 recite the limitation “transmitting the customer identity, needs and appointment information file to the field sales representative”. Field sales representative is a person, and the file is transmitted to the computer system of the field sales representative.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storch et al. US Patent 5,920,846 hereinafter known as Storch in view of an article "Portable Computing Extends The Enterprise" by Deb Navas.

Regarding claims 1 and 2, Storch teaches system and method for an automated sales method (processing service request). Storch does not teach system and method for moving and storing industry (field of use). However, Official notice it taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made that it is a business choice to decide how to use design the system and method to meet business requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Storch for moving and storing industry to automate the business objective (In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)).

Storch teaches:

inputting into the computer system of the mover entity (field of use) the customer identity and needs (The order taker person 61 or customer inputs customer information into the computer order entry system 63 such as the customer's name and phone number (if applicable), address, and the type of service requested) [col. 16, line 66].

entering into the computer system of the mover entity an appointment date for the customer and the field sales representative of the mover entity (The system has computer data processing means for assigning to the service order an available appointment date and time for installation of the requested service based upon updated information indicating the availability of qualified outside technicians).

transmitting the customer identity, needs and appointment information file to the field sales representative (WFA/DO transmits a copy of the service order to technician).

Storch does not teach entering into the customer file at the customer location the details of the material to be moved. However, Navas teaches remote terminals can now access and interact with host applications, intranets, and the Internet in real time, via radio or cellular communications, effectively making the corporate information system and other data resources accessible from any location in the world.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Storch as taught by Navas to create a mobile and productive support team.

Storch does not teach processing the details of the material to be moved (e.g. gathering information to determine work load) to produce an estimate of the details for moving the material and an order for moving the material (generate an estimate).

However, Navas teaches companies across all industries as well as government agencies have invested billions in implementing market-specific applications, such as dispatch and field service management.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Storch as taught by Navas to create a mobile and productive support team.

Storch in view of Navas teaches capability of transmitting the estimate and order to the computer of the mover entity (e.g. host computer) for further processing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 CFR '1.111 (c) to consider the references fully when responding to this office action.

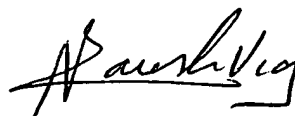
1. Borghesi et al. US Patent 5,950,169

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naresh Vig whose telephone number is 703.305.3372. The examiner can normally be reached on M-F 7:30 - 5:00 (Alt Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 703.308.2702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Naresh Vig", with a horizontal line underneath the name.

Naresh Vig
Patent Examiner
December 3, 2004

Notice of References Cited	Application/Control No. 09/779,964	Applicant(s)/Patent Under Reexamination FULTZ, CHRIS R.	
	Examiner Naresh Vig	Art Unit 3629	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,920,846 A	07-1999	Storch et al.	705/7
	B	US-5,950,169 A	09-1999	Borghesi et al.	705/4
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Deb Navas, Portable Computing Extends The Enterprise, December 1999, Helmers Publishing, Inc.
	V	
	W	
	X	

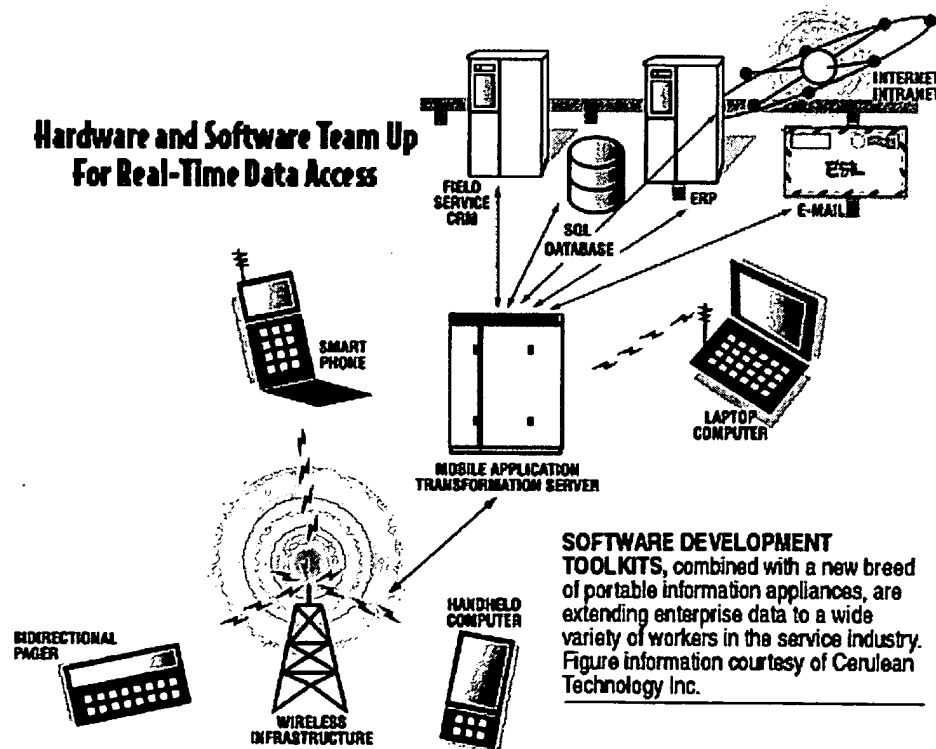
*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Portable Computing Extends The Enterprise

The need for real-time interactive access to corporate data in the field is driving mobile technologies and richer applications.

DEB NAVAS, EDITOR AT LARGE

Until recently, mobile computing in the ADC world typically meant using portable terminals to collect data at remote locations, with minimal data manipulation performed on the handheld, and then uploading to a host system at some later time. Rapid advances in hardware, software, and communications have radically changed that picture, however. Many rugged portable terminals now sport all the capabilities, including processing power and memory, of desktop computers, enabling sophisticated data processing on location. Even more important, remote terminals can now access and interact with host applications, intranets, and the Internet in real time, via radio or cellular communications, effectively making the corporate information system and other data resources accessible from any location in the world.



Market Forces

Although technology breakthroughs have made these advances possible, the dynamic behind these new mobile application developments is primarily market driven. "You're seeing a plethora of devices on the market now in field service, and customers want the flexibility to choose," said Dave Rosi, vice president of marketing for Cerulean Technology Inc. (Marlborough, MA), a provider of wireless application software and services delivering access to

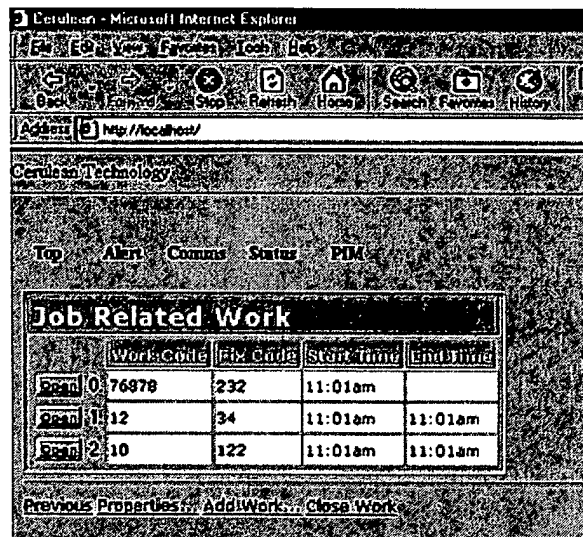
"corporate and Internet-based information. "The big driver is productivity."

Mr. Rosi pointed out that other business trends have set the stage for mobile computing proliferation. For example, over the last decade companies across all industries as well as government agencies have invested billions in implementing corporate and Internet-based data warehouses, ERP solutions, and market-specific applications, such as dispatch and field service management. "The mobile workforce is expanding exponentially, and so is the need to make it more productive," he said. "More information resources and more mobile workers armed with wireless devices have created the need for integrating these technologies to effectively extend the enterprise."

According to Mr. Rosi, mobile technologies being deployed today are driving increased cash flow via signature capture and bar code scanning to speed up billing cycles. They are also increasing the number and quality of service calls through online scheduling and real-time access to work history and parts inventory. For a mobile sales force, the instant availability of critical information can secure the sale.

Of course, not all mobile applications require wireless. Although Venture Development Corp. (Natick, MA) says revenue growth in sales of RF units is higher than for batch terminals, unit sales of batch devices accounted for about 67 percent of the 990,300 PDTs sold in North America in 1998.

At Videx (Corvallis, OR), the advent of the company's new LaserLite Mx means the additional expense of a real-time system can be challenged, since many applications require current information but not necessarily interactive information exchange with the corporate database. With the Mx, a data collector that utilizes solid-state smart media cards for increased memory, the ability to store and manipulate data on the reader makes it a viable and affordable option in situations in which RF may have been the original consideration.



WITH CERULEAN TECHNOLOGY'S MOBILEFUSION, field workers can complete and update job-specific information, such as time spent on a service call, thus enabling the home office to capture valuable mean-time-to-repair information and site status.

Public safety, which is a primary market for Cerulean, was one of the first sectors to adopt wireless technology. "Mobile technology use began with safety [as] the primary need, but as that need was satisfied, productivity has taken center stage," said Mr. Rosi.

Cerulean's software product, MobileFusion, provides a wireless Windows NT server platform for building field applications that can access multiple corporate resources via any wireless infrastructure and hardware device. The system's Webcentric Java-based server and thin-client model supports HTML, HDML, and, shortly, WAP (wireless application protocol) standards, enabling users in the field to access any combination of ODBC repositories, POP3 mail servers, and Microsoft Exchange applications simultaneously.

Mr. Rosi cautions

that users new to mobile environments should heed this caveat: "Wireless infrastructures are still bandwidth scarce, and capabilities vary dramatically. Data internal to corporations runs over WANs and LANs at speeds of 10 to 100-plus megabits per second, versus wireless WANs using CDPD [cellular digital packet data] flowing at 19.2 kilobits per second. It's critical to be working with a solution that [can] manage bandwidth effectively. You aren't going to be sending big graphics files—no spinning logos—in this environment."

Several other companies provide

tools that let developers create applications that extend corporate information out to the field, and vice versa. Companies such as AvantGo (San Mateo, CA), DataMAX Software Group (El Dorado Hills, CA), Datavision-Prologix (Warminster, PA), Epic Data, PenRight! (Fremont, CA), Point Information Network (Kirkland, WA), Puma Technologies (San Jose, CA), Riverbed Technologies (Vienna, VA), and many others (for more information, see "Where to Find the Middleware," in our March 1999 issue) provide tools that let developers extend enterprise data to handheld users in the field. These tools typically offer graphical forms design capabilities with support for a wide variety of wired and wireless networks.

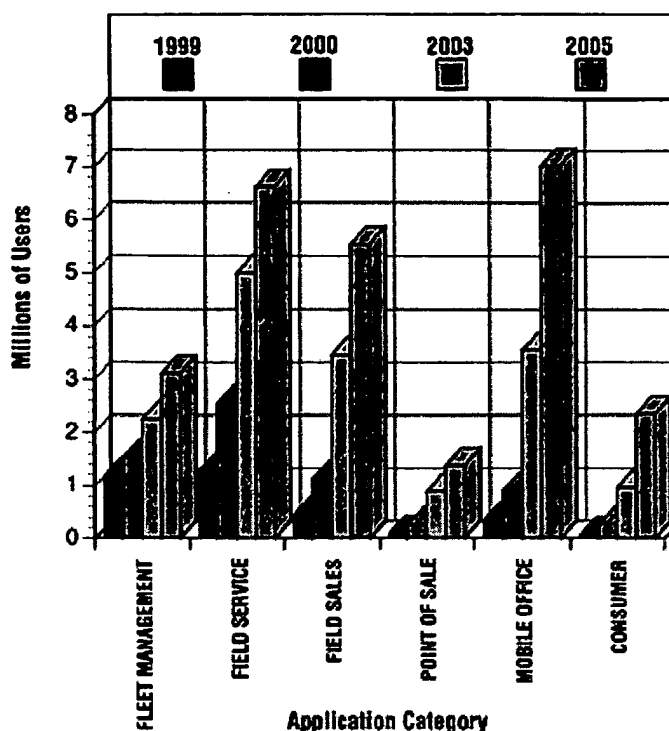
Often, these tools provide a means of automatically converting data into HTML for viewing on thin clients residing in the handhelds. Rules transformation engines modify the original data for optimal viewing. Also, most support a variety of platforms.

Talk to Your Computer

One inherent problem in taking portable data terminals (PDTs) into the field has been inconvenience; entering data typically requires holding them. For work that engages the hands, handhelds can be time consuming and inefficient. Symbol Technologies first addressed this problem with its wearable keyboard/screen display and finger scanner back in 1992. The device is used mainly for hands-free warehousing/sortation applications.

Other solutions from companies such as Voxware (Princeton, NJ) and SyVox (Boulder, CO) provide voice-enabled solutions specifically designed for working in adverse environments such as noisy factories or warehouses. Applications provided by these companies typically fall under warehouse picking, package handling, returns processing, and inspection. Unlike desktop

Wireless WAN Mobile Data Market-by-Market Segment



ALTHOUGH FIELD SALES and mobile office wide area network applications are currently not the leaders in terms of installed users worldwide, the Yankee Group (Boston, MA) forecasts that these categories will see increased growth in the future. Source: Yankee Group, 1.617.956. 5000.

voice dictation applications, which must be prepared to recognize thousands of words, industrial solutions from Voxware, Syvox, and others must recognize only several dozen words specific to a certain application. Having to recognize only a constrained list of words improves the accuracy of these industrial solutions.

Certain types of hands-free applications, however, demand powerful data, voice, and image processing from a handheld or wearable device. Companies such as Xybernaut (Fairfax, VA) now provide wearable computers that deliver sophisticated input and data processing capabilities. With Xybernaut's 28-ounce Wintel-based wireless wearable system, the MA IV, the CPU is worn on the belt and a VGA color display is worn on the head, positioned in front of either eye. The MA IV accepts voice, keyboard, and video input and features a 233 MHz Pentium, 128 MB of RAM, and dual PC cards for memory and LAN, cellular, and GPS communications. With a price tag approaching \$5000, it's definitely not intended for your father's data collection applications. Super PDTs like the MA IV are opening up a whole new level of field applications where onsite processing and real-time access to the host database are required.

Products such as the MA IV are pre-eminent among wearable wireless devices, in that they are full-featured computers providing a field workstation for interactive data collection and processing. The MA IV's Pentium processor can handle demanding applications, such as one implemented by a municipal department of transportation, where employees travel streets and highways logging the condition of signs. The menu-driven software provides on-screen prompts listing wear attributes, which are recorded by digitized voice input; integrated GPS records the exact sign location. Area maps can also be brought up on screen for pinpointing locations.

Benefits of Real-Time Interactivity

"Hands-free computing is driven by the need to interact with information appliances the same way you do with people," said Kevin Jackson, president of Zocom Inc. (Manassas, VA, 1.914. 761.5009).

Zocom provides consulting services to integrators and customers of wearable computer systems. Hands-free operation implies voice and speech recognition, but, Mr. Jackson noted, voice technology is not the prime requirement for wearable computers to be effective: "With wearable computers, the number-one question is: Do you need telepresence—real-time interactivity—which requires a powerful processor and plenty of storage for this class of remote application?"

A typical example might be remote power plant inspections during which an infrared (IR) camera is used to photograph transformers. With IR technology, color levels correspond to the heat levels generated, with certain temperatures indicating failure.

"You need a computer to analyze the image on the spot, and you may need to transmit it immediately to an offsite expert," explained Mr. Jackson. "With any type of process industry inspection, telepresence and local processing improve an operator's ability to quickly respond to changes, enhancing safety."

Having this level of processing power and telepresence onsite also generates substantial cost savings through better allocation of personnel. One engineer, for example, can analyze images transmitted from a variety of field locations that were taken by lower-level operators.

Tracking at the Pentagon

Though the Department of Defense pioneered ADC use in materials handling applications more than 20 years ago, it is notably behind the times in certain more mundane areas, such as tracking the Pentagon's 100,000 pieces of

computer equipment. James Kirtley, manager of mobile computing for Mobile Universe (Alexandria, VA) is designing a multifaceted asset tracking system for the DoD, using Xybernaut's MA IV.

According to Mr. Kirtley, incoming computers and equipment have been bar code labeled (encoding equipment serial numbers using U.P.C. symbology) but not scanned. All computer serial numbers were manually entered into a database, a process that not only has been cumbersome in terms of data entry, but has also necessitated annual physical inventories, which take a month to perform.

"We're using MA IVs (with a Windows 95 OS) integrated with a laser scanner so they'll be able to scan the existing bar code labels for physical inventory," explained Mr. Kirtley. Voice input will be used to supply location information, such as room and building, and all data will be entered directly, via Proxim radio modem (and an Access Point radio transmitter) into a SQL database on a Compaq NT server.

For the voice system backup, Mobile Universe chose a flat-screen display with touchscreen input, worn on the arm, with the laser scanner attached to it, giving employees use of their hands for lifting and for climbing to scan equipment in difficult-to-reach areas.

"We chose Xybernaut because we saw it as a first step in a more complicated solution, involving operations support," noted Mr. Kirtley. "We envision operators going to remote locations and transmitting real-time videos of computer maintenance problems back to a central location for expert analysis."

Windows CE Looming

In the traditional ADC portable data collection marketplace, Intermec, Symbol Technologies, Telxon, and other vendors have announced or released Windows CE-based PDTs, but analysts say CE's impact will be felt more in new market areas than in industrial computing.

"CE's impact on the traditional warehousing and route accounting blue-collar applications is likely to be limited," said David Krebs, AIDC project manager for Venture Development. "CE is more feature rich and appropriate to multifunctional devices. We see more of a fit with remote white-collar applications needing access to corporate data."

Though the old-style white-collar portable computing applications have been dominated by notebooks and spreadsheets, these distinctions (as well as collar-color designations) are changing. Mr. Krebs noted that form factor, lighter weight, and advantages to developers—such as using Win32 APIs (application programming interfaces) for integrating with corporate networks—are all enticements to switch to CE-based devices. Notebooks, however, do not really address the new markets that Intermec, Symbol, and Telxon see opening up as supply chain networks grow more enterprise-centric. "Initially it will be a difficult sell," said Mr. Krebs. "But the business potential is there."

One of CE's biggest benefits is its familiarity to developers, offering the same Windows environment from desktop down to handheld, according to Tony Black, group manager for developer relations at Intermec (Everett, WA). "And only the Windows world can say that," he noted. Furthermore, he pointed out, CE provides a rich applications environment that can handle sound, graphics, and video. Several of Intermec's CE-based terminals are equipped with a remote-management capability, so that centrally based technicians can browse into remote hardware to perform diagnostics and configuration functions.

Symbol Technologies (Holtsville, NY) is alone among PDT suppliers in

- supporting DOS, Palm OS, and Windows CE; company officials say Symbol will remain agnostic about the operating systems it supports. (For more on handheld OS tradeoffs, see "New OS Tools Mean Real Handheld Choices," November 1999.)

Mr. Black said that Intermec anticipates CE sales in its traditional handheld markets of manufacturing, warehousing, inventory, route accounting, and health care. But like many other vendors, Intermec is exploiting the possibility of new, enterprise-driven applications because of CE's easier access to corporate data: "The biggest trend in our space is enterprise data collection. Traditional handheld devices were pretty much islands of data collection; now they're sensors at the end of the data network. You're going to have mobile devices with bar code scanners or without, functioning remotely as just another desktop. The business benefits will come from extending the enterprise network with richer remote collection and management applications, at lower maintenance costs."

DEB NAVAS is *ID Systems'* editor at large. She has been writing about ADC for ten years.

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x ID Systems

174 Concord St.

Peterborough, NH 03458

Telephone: (603) 924-9631

Fax: (603) 924-7408

E-mail: editors@idsystems.com

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